

Abstract: In this work we study elementary primitives to elementary functions. At first we have to give precise meaning to the notion of the "elementary function". In the nineteenth century Liouville worked on this problem and proved that certain integrals cannot be expressed as an elementary function. We formulate Liouville's theorem and several other theorems. Liouville's theorem says that if a function has an elementary primitive then it has to have a special form. The other theorems mostly consider special classes of functions and we use them to show that there is no elementary primitive to some functions.